

Financial Transactions Analysis

```
mysql> USE financial_data;
```

```
Database changed
```

```
mysql> -- Total number of transactions
```

```
mysql> SELECT COUNT(*) AS total_transactions FROM transactions;
```

```
+-----+
```

```
| total_transactions |
```

```
+-----+
```

```
|           1000 |
```

```
+-----+
```

```
1 row in set (0.00 sec)
```

```
mysql>
```

```
mysql> -- Total credit and debit amounts
```

```
mysql> SELECT
```

```
    ->      SUM(CASE WHEN amount > 0 THEN amount ELSE 0 END) AS  
total_credits,
```

```
    ->      SUM(CASE WHEN amount < 0 THEN amount ELSE 0 END) AS  
total_debits
```

```
    -> FROM transactions;
```

```
+-----+-----+
```

```
| total_credits | total_debits |
```

```
+-----+-----+
```

```
|    487478.70 |         0.00 |
```

```
+-----+-----+
```

```
1 row in set (0.00 sec)
```

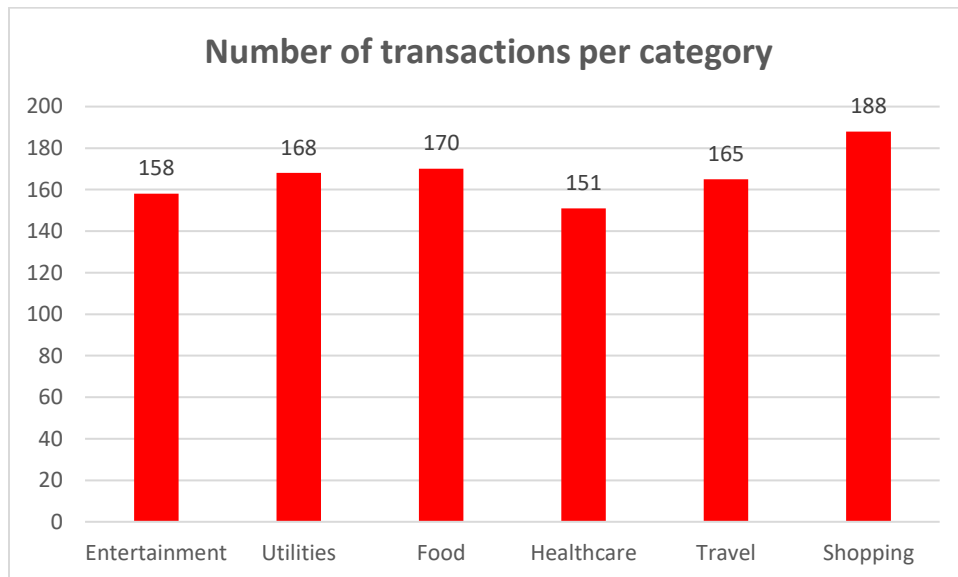
```
mysql>
```

```
mysql> -- Number of transactions per category
```

```
mysql> SELECT category, COUNT(*) AS num_transactions
      -> FROM transactions
      -> GROUP BY category;
```

category	num_transactions
Entertainment	158
Utilities	168
Food	170
Healthcare	151
Travel	165
Shopping	188

6 rows in set (0.00 sec)

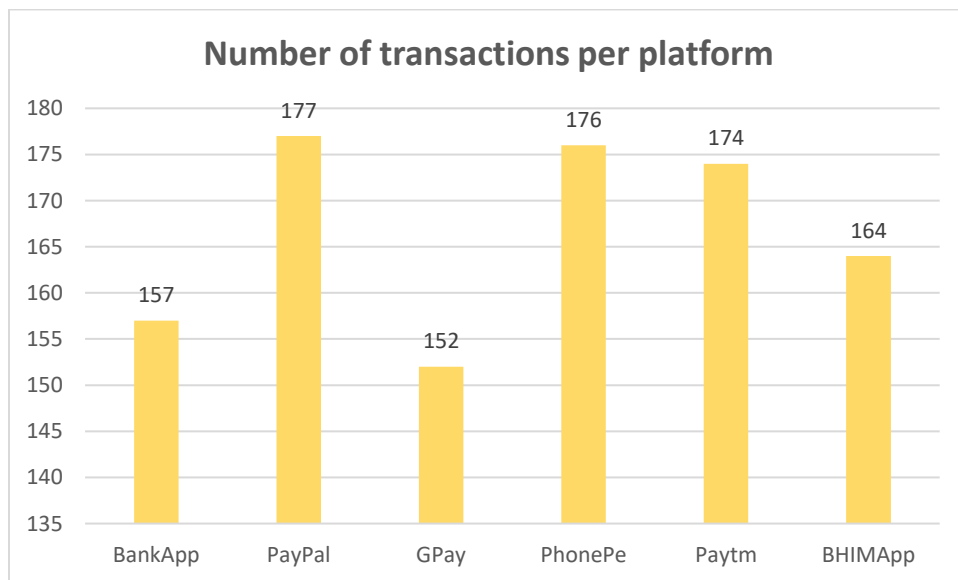


```
mysql>
mysql> -- Number of transactions per platform
mysql> SELECT transaction_platform, COUNT(*) AS num_transactions
      -> FROM transactions
```

```
-> GROUP BY transaction_platform;
```

+-----+-----+	
transaction_platform num_transactions	
+-----+-----+	
BankApp	157
PayPal	177
GPay	152
PhonePe	176
Paytm	174
BHIMApp	164
+-----+-----+	

```
6 rows in set (0.00 sec)
```



```
mysql>
```

```
mysql> -- Total transactions per month
```

```
mysql> SELECT
```

```
->     DATE_FORMAT(datetime, '%Y-%m') AS month,  
->     COUNT(*) AS num_transactions,  
->     SUM(amount) AS total_amount
```

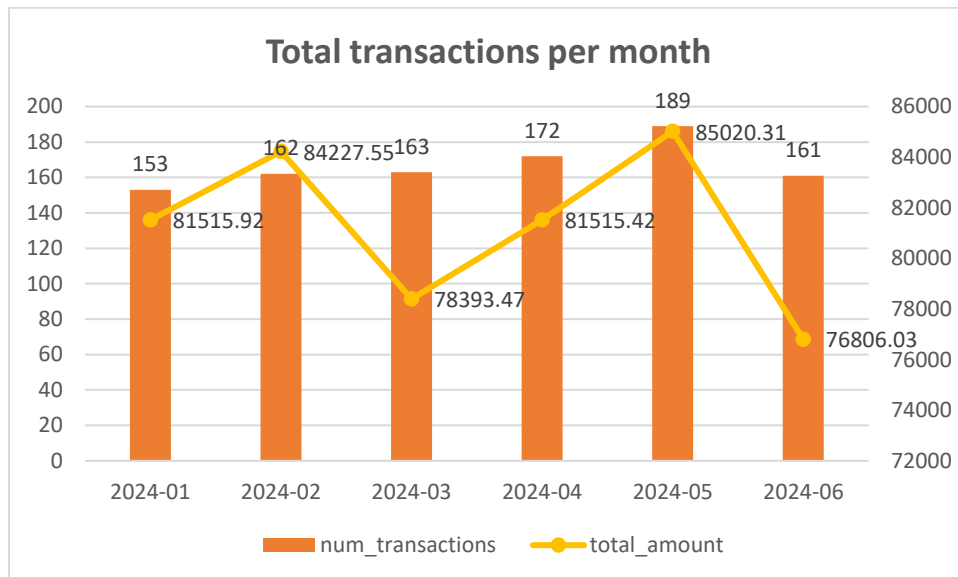
```

-> FROM transactions
-> GROUP BY month
-> ORDER BY month;

```

month	num_transactions	total_amount
2024-01	153	81515.92
2024-02	162	84227.55
2024-03	163	78393.47
2024-04	172	81515.42
2024-05	189	85020.31
2024-06	161	76806.03

6 rows in set (0.00 sec)



```
mysql>
```

```
mysql> -- Average transaction amount per month
```

```
mysql> SELECT
```

```

->     DATE_FORMAT(datetime, '%Y-%m') AS month,

```

```

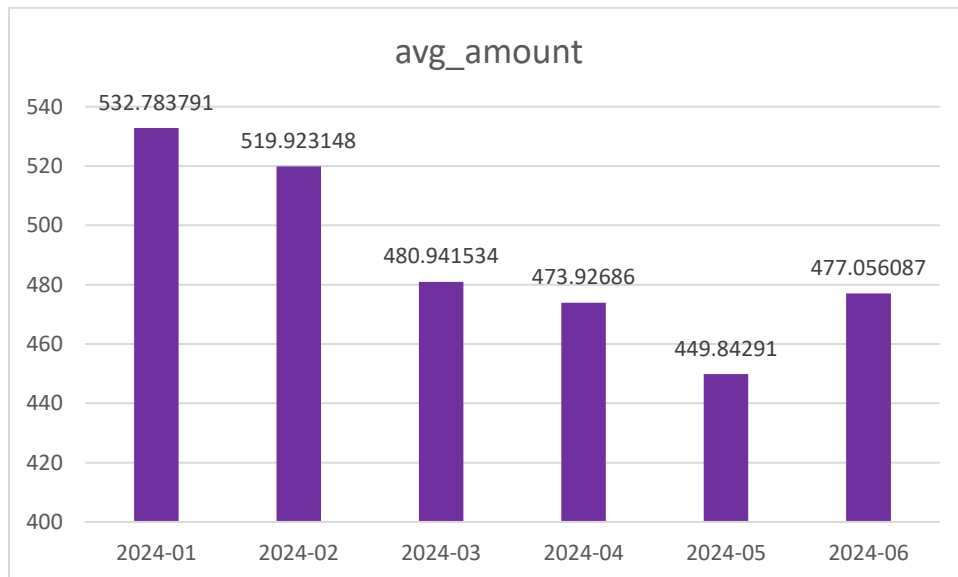
->     AVG(amount) AS avg_amount
-> FROM transactions
-> GROUP BY month
-> ORDER BY month;

```

```

+-----+-----+
| month   | avg_amount |
+-----+-----+
| 2024-01 | 532.783791 |
| 2024-02 | 519.923148 |
| 2024-03 | 480.941534 |
| 2024-04 | 473.926860 |
| 2024-05 | 449.842910 |
| 2024-06 | 477.056087 |
+-----+-----+
6 rows in set (0.00 sec)

```



```
mysql>
```

```
mysql> -- Transactions by category and platform
```

```
mysql> SELECT
```

```

->     category,

```

```

->     transaction_platform,
->     COUNT(*) AS num_transactions,
->     SUM(amount) AS total_amount
-> FROM transactions
-> GROUP BY category, transaction_platform
-> ORDER BY category, transaction_platform;

```

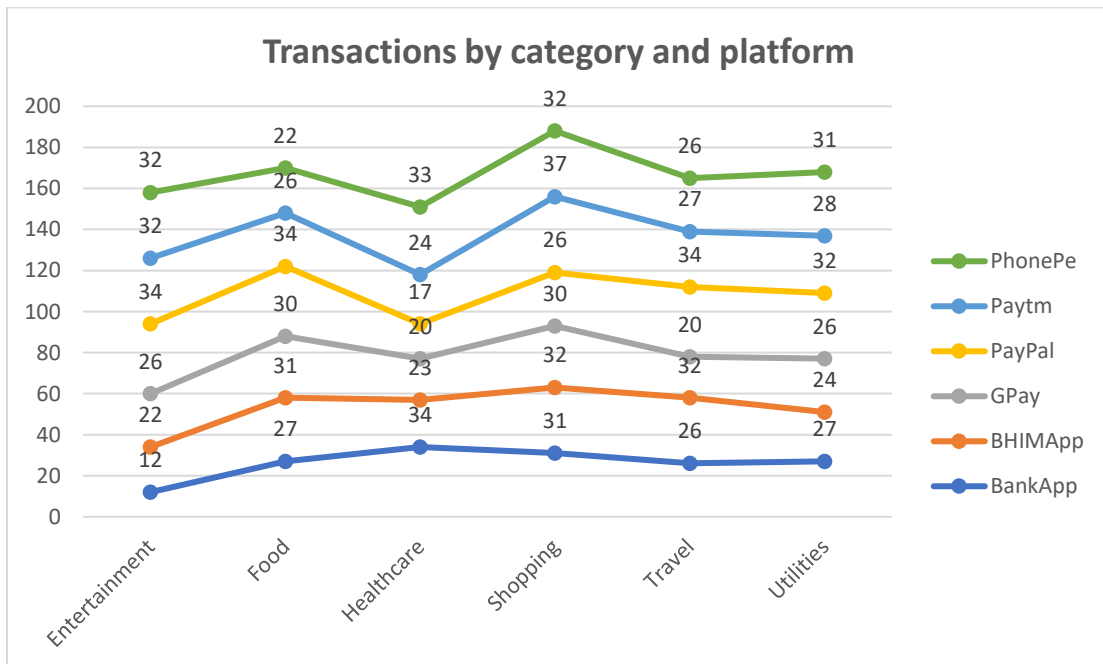
category	transaction_platform	num_transactions	total_amount
Entertainment	BankApp	12	6425.61
Entertainment	BHIMApp	22	12325.34
Entertainment	GPay	26	12640.53
Entertainment	PayPal	34	16161.35
Entertainment	Paytm	32	16222.04
Entertainment	PhonePe	32	16489.08
Food	BankApp	27	10860.58
Food	BHIMApp	31	15945.78
Food	GPay	30	14533.58
Food	PayPal	34	16110.49
Food	Paytm	26	12982.51

Food	PhonePe	22	11916.31
Healthcare	BankApp	34	17689.22
Healthcare	BHIMApp	23	12335.46
Healthcare	GPay	20	10337.00
Healthcare	PayPal	17	9107.80
Healthcare	Paytm	24	12338.14
Healthcare	PhonePe	33	13135.46
Shopping	BankApp	31	15535.65
Shopping	BHIMApp	32	16166.41
Shopping	GPay	30	13882.47
Shopping	PayPal	26	13072.96
Shopping	Paytm	37	18733.06
Shopping	PhonePe	32	13309.22
Travel	BankApp	26	11607.48
Travel	BHIMApp	32	16370.23
Travel	GPay	20	10398.78
Travel	PayPal	34	18834.34
Travel	Paytm	27	13379.70

Travel	PhonePe	26	12838.37
Utilities	BankApp	27	14515.33
Utilities	BHIMApp	24	10547.60
Utilities	GPay	26	11071.57
Utilities	PayPal	32	12689.14
Utilities	Paytm	28	13280.05
Utilities	PhonePe	31	13690.06

-----+
 -+

36 rows in set (0.00 sec)



mysql>

mysql>

mysql> -- Monthly trends by transaction type


```
mysql> SELECT
```

```
->     DATE_FORMAT(datetime, '%Y-%m') AS month,
```

```
->     transaction_type,
```

```
->     COUNT(*) AS num_transactions,
```

```
->     SUM(amount) AS total_amount
```

```
-> FROM transactions
```

```
-> GROUP BY month, transaction_type
```

```
-> ORDER BY month, transaction_type;
```

+-----+-----+-----+-----+			
month	transaction_type	num_transactions	total_amount
+-----+-----+-----+-----+			
2024-01	CrebitCard	49	27581.70
2024-01	DebitCard	33	16700.05
2024-01	NetBanking	42	23179.34
2024-01	UPI	29	14054.83
2024-02	CrebitCard	31	15799.97
2024-02	DebitCard	40	19993.55
2024-02	NetBanking	47	25619.21
2024-02	UPI	44	22814.82
2024-03	CrebitCard	34	15317.41
2024-03	DebitCard	53	25565.00
2024-03	NetBanking	37	17740.66
2024-03	UPI	39	19770.40
2024-04	CrebitCard	45	16849.61
2024-04	DebitCard	42	21999.09
2024-04	NetBanking	50	25714.46
2024-04	UPI	35	16952.26
2024-05	CrebitCard	36	16578.45
2024-05	DebitCard	49	19360.26
2024-05	NetBanking	54	25351.84

2024-05 UPI		50		23729.76	
2024-06 CrebitCard		43		19541.88	
2024-06 DebitCard		41		20317.02	
2024-06 NetBanking		31		16908.50	
2024-06 UPI		46		20038.63	

+-----+-----+-----+-----+

24 rows in set (0.00 sec)

mysql>

mysql> -- Transaction patterns for each category

mysql> SELECT

```

->     category,
->     DATE_FORMAT(datetime, '%Y-%m') AS month,
->     COUNT(*) AS num_transactions,
->     SUM(amount) AS total_amount
-> FROM transactions
-> GROUP BY category, month
-> ORDER BY category, month;

```

+-----+-----+-----+-----+

category	month	num_transactions	total_amount	
----------	-------	------------------	--------------	--

+-----+-----+-----+-----+

Entertainment	2024-01		19		11357.57	
Entertainment	2024-02		24		15630.32	
Entertainment	2024-03		23		9880.26	
Entertainment	2024-04		31		14658.09	
Entertainment	2024-05		35		15368.78	
Entertainment	2024-06		26		13368.93	
Food	2024-01		30		17367.90	
Food	2024-02		26		12632.21	
Food	2024-03		34		16899.58	

Food	2024-04	20	9793.53	
Food	2024-05	31	13427.71	
Food	2024-06	29	12228.32	
Healthcare	2024-01	29	17311.19	
Healthcare	2024-02	22	11717.43	
Healthcare	2024-03	15	7971.41	
Healthcare	2024-04	21	9180.76	
Healthcare	2024-05	36	14405.91	
Healthcare	2024-06	28	14356.38	
Shopping	2024-01	29	12539.21	
Shopping	2024-02	30	16274.89	
Shopping	2024-03	32	14908.03	
Shopping	2024-04	40	20743.65	
Shopping	2024-05	25	11470.14	
Shopping	2024-06	32	14763.85	
Travel	2024-01	17	7161.00	
Travel	2024-02	32	17021.50	
Travel	2024-03	29	15882.06	
Travel	2024-04	32	15896.99	
Travel	2024-05	32	16462.66	
Travel	2024-06	23	11004.69	
Utilities	2024-01	29	15779.05	
Utilities	2024-02	28	10951.20	
Utilities	2024-03	30	12852.13	
Utilities	2024-04	28	11242.40	
Utilities	2024-05	30	13885.11	
Utilities	2024-06	23	11083.86	

+-----+-----+-----+-----+

36 rows in set (0.00 sec)

```
mysql>
```

```
mysql> -- Average transaction amount by platform
```

```
mysql> SELECT
```

```
    ->     transaction_platform,
```

```
    ->     AVG(amount) AS avg_amount
```

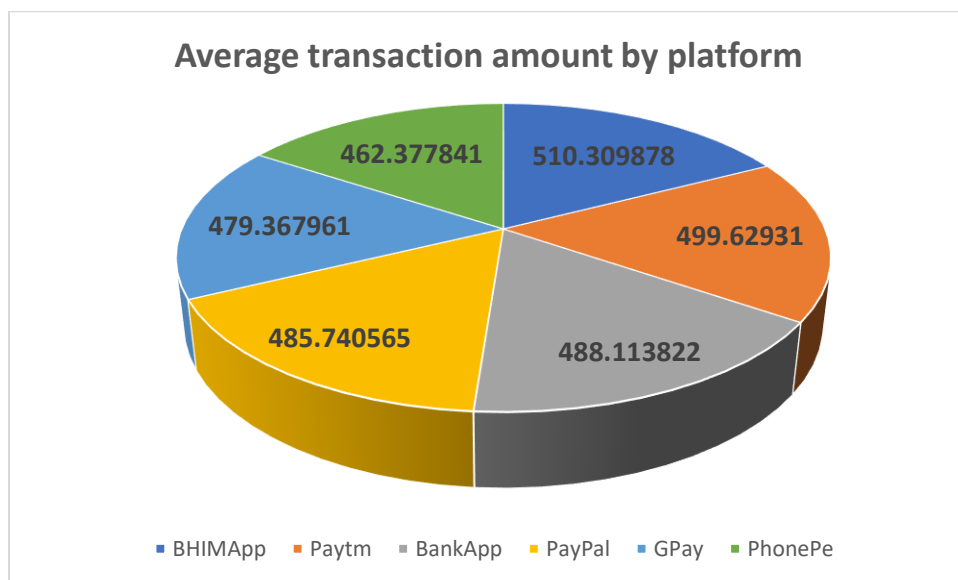
```
    -> FROM transactions
```

```
    -> GROUP BY transaction_platform
```

```
    -> ORDER BY avg_amount DESC;
```

```
+-----+-----+
| transaction_platform | avg_amount |
+-----+-----+
| BHIMApp             | 510.309878 |
| Paytm               | 499.629310 |
| BankApp             | 488.113822 |
| PayPal              | 485.740565 |
| GPay                | 479.367961 |
| PhonePe             | 462.377841 |
+-----+-----+
```

```
6 rows in set (0.00 sec)
```



```
mysql>
```

```
mysql> -- Transaction volume heatmap
```

```
mysql> SELECT
```

```
->     DATE_FORMAT(datetime, '%Y-%m-%d') AS day,
```

```
->     COUNT(*) AS num_transactions
```

```
-> FROM transactions
```

```
-> GROUP BY day
```

```
-> ORDER BY day;
```

```
+-----+-----+
| day          | num_transactions |
+-----+-----+
| 2024-01-01   | 11 |
| 2024-01-02   | 7  |
| 2024-01-03   | 3  |
| 2024-01-04   | 4  |
| 2024-01-05   | 6  |
| 2024-01-06   | 4  |
| 2024-01-07   | 4  |
| 2024-01-08   | 3  |
| 2024-01-09   | 5  |
| 2024-01-10   | 4  |
| 2024-01-11   | 7  |
| 2024-01-12   | 6  |
| 2024-01-13   | 7  |
| 2024-01-14   | 2  |
| 2024-01-15   | 5  |
| 2024-01-16   | 5  |
| 2024-01-17   | 6  |
| 2024-01-18   | 4  |
```

2024-01-19	6
2024-01-20	3
2024-01-21	3
2024-01-22	6
2024-01-23	6
2024-01-24	8
2024-01-25	5
2024-01-26	3
2024-01-27	5
2024-01-28	6
2024-01-29	3
2024-01-30	5
2024-01-31	1
2024-02-01	6
2024-02-02	5
2024-02-03	8
2024-02-04	8
2024-02-05	4
2024-02-06	6
2024-02-07	11
2024-02-08	6
2024-02-09	8
2024-02-10	7
2024-02-11	6
2024-02-12	4
2024-02-13	7
2024-02-14	4
2024-02-15	5
2024-02-16	5
2024-02-17	7

2024-02-18	6
2024-02-19	3
2024-02-20	3
2024-02-21	1
2024-02-22	4
2024-02-23	4
2024-02-24	4
2024-02-25	5
2024-02-26	7
2024-02-27	5
2024-02-28	8
2024-02-29	5
2024-03-01	1
2024-03-02	2
2024-03-03	14
2024-03-04	2
2024-03-05	4
2024-03-06	6
2024-03-07	5
2024-03-08	6
2024-03-09	9
2024-03-10	3
2024-03-11	6
2024-03-12	6
2024-03-13	4
2024-03-14	5
2024-03-15	3
2024-03-16	4
2024-03-17	2
2024-03-18	10

2024-03-19	6
2024-03-20	2
2024-03-21	7
2024-03-22	6
2024-03-23	6
2024-03-24	6
2024-03-25	5
2024-03-26	8
2024-03-27	4
2024-03-28	6
2024-03-29	5
2024-03-30	6
2024-03-31	4
2024-04-01	6
2024-04-02	7
2024-04-03	7
2024-04-04	4
2024-04-05	7
2024-04-06	7
2024-04-07	6
2024-04-08	8
2024-04-09	5
2024-04-10	5
2024-04-11	6
2024-04-12	4
2024-04-13	9
2024-04-14	9
2024-04-15	2
2024-04-16	7
2024-04-17	4

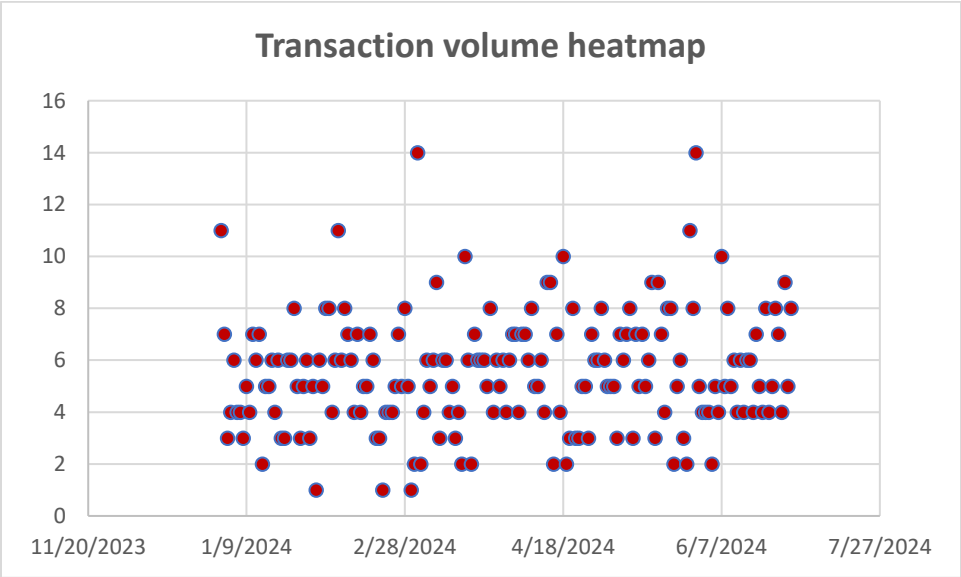
2024-04-18	10
2024-04-19	2
2024-04-20	3
2024-04-21	8
2024-04-22	3
2024-04-23	3
2024-04-24	5
2024-04-25	5
2024-04-26	3
2024-04-27	7
2024-04-28	6
2024-04-29	6
2024-04-30	8
2024-05-01	6
2024-05-02	5
2024-05-03	5
2024-05-04	5
2024-05-05	3
2024-05-06	7
2024-05-07	6
2024-05-08	7
2024-05-09	8
2024-05-10	3
2024-05-11	7
2024-05-12	5
2024-05-13	7
2024-05-14	5
2024-05-15	6
2024-05-16	9
2024-05-17	3

2024-05-18	9
2024-05-19	7
2024-05-20	4
2024-05-21	8
2024-05-22	8
2024-05-23	2
2024-05-24	5
2024-05-25	6
2024-05-26	3
2024-05-27	2
2024-05-28	11
2024-05-29	8
2024-05-30	14
2024-05-31	5
2024-06-01	4
2024-06-02	4
2024-06-03	4
2024-06-04	2
2024-06-05	5
2024-06-06	4
2024-06-07	10
2024-06-08	5
2024-06-09	8
2024-06-10	5
2024-06-11	6
2024-06-12	4
2024-06-13	6
2024-06-14	4
2024-06-15	6
2024-06-16	6

2024-06-17	4
2024-06-18	7
2024-06-19	5
2024-06-20	4
2024-06-21	8
2024-06-22	4
2024-06-23	5
2024-06-24	8
2024-06-25	7
2024-06-26	4
2024-06-27	9
2024-06-28	5
2024-06-29	8

+-----+-----+

181 rows in set (0.00 sec)



```
mysql>
mysql> -- Transaction value heatmap
mysql> SELECT
```

```

->     DATE_FORMAT(datetime, '%Y-%m-%d') AS day,
->     SUM(amount) AS total_amount
-> FROM transactions
-> GROUP BY day
-> ORDER BY day;

```

+-----+-----+	
day	total_amount
+-----+-----+	
2024-01-01	4851.15
2024-01-02	4368.79
2024-01-03	1446.70
2024-01-04	892.22
2024-01-05	3609.38
2024-01-06	2244.85
2024-01-07	1955.30
2024-01-08	1624.59
2024-01-09	2445.61
2024-01-10	3364.26
2024-01-11	3412.19
2024-01-12	3683.19
2024-01-13	3854.65
2024-01-14	1003.73
2024-01-15	2447.69
2024-01-16	2969.18
2024-01-17	3462.57
2024-01-18	2566.44
2024-01-19	3427.84
2024-01-20	1538.32
2024-01-21	1461.26
2024-01-22	3011.35

2024-01-23	3035.02
2024-01-24	3971.93
2024-01-25	2980.62
2024-01-26	1551.82
2024-01-27	3320.62
2024-01-28	3442.05
2024-01-29	1228.93
2024-01-30	2279.59
2024-01-31	64.08
2024-02-01	2810.00
2024-02-02	3286.16
2024-02-03	4176.43
2024-02-04	3407.70
2024-02-05	1190.82
2024-02-06	3270.99
2024-02-07	6072.73
2024-02-08	3375.14
2024-02-09	4393.09
2024-02-10	3380.67
2024-02-11	3044.34
2024-02-12	1641.37
2024-02-13	4034.36
2024-02-14	2430.91
2024-02-15	1954.78
2024-02-16	2058.20
2024-02-17	4306.14
2024-02-18	3359.78
2024-02-19	1321.73
2024-02-20	2135.94
2024-02-21	651.30

2024-02-22	992.77
2024-02-23	1920.50
2024-02-24	2174.00
2024-02-25	3547.57
2024-02-26	3922.55
2024-02-27	1548.54
2024-02-28	4120.39
2024-02-29	3698.65
2024-03-01	886.22
2024-03-02	900.56
2024-03-03	6315.85
2024-03-04	371.29
2024-03-05	1255.39
2024-03-06	4142.21
2024-03-07	1010.99
2024-03-08	2658.07
2024-03-09	5125.25
2024-03-10	1464.10
2024-03-11	3249.15
2024-03-12	1096.27
2024-03-13	3239.90
2024-03-14	2720.43
2024-03-15	1444.04
2024-03-16	3432.13
2024-03-17	896.15
2024-03-18	3427.08
2024-03-19	2639.74
2024-03-20	1056.95
2024-03-21	3888.67
2024-03-22	2459.65

2024-03-23	2930.23
2024-03-24	2140.73
2024-03-25	3261.42
2024-03-26	3688.70
2024-03-27	1344.73
2024-03-28	3487.08
2024-03-29	3268.70
2024-03-30	1780.65
2024-03-31	2811.14
2024-04-01	2188.98
2024-04-02	2945.01
2024-04-03	2338.52
2024-04-04	1179.33
2024-04-05	4416.88
2024-04-06	4268.88
2024-04-07	2963.03
2024-04-08	3136.83
2024-04-09	2520.07
2024-04-10	1680.19
2024-04-11	1828.77
2024-04-12	2700.03
2024-04-13	3337.12
2024-04-14	4778.51
2024-04-15	966.54
2024-04-16	3838.44
2024-04-17	3023.28
2024-04-18	5332.25
2024-04-19	1059.46
2024-04-20	912.38
2024-04-21	3110.56

2024-04-22	1449.47
2024-04-23	1083.81
2024-04-24	1887.62
2024-04-25	2962.85
2024-04-26	1551.58
2024-04-27	3088.62
2024-04-28	3824.65
2024-04-29	3132.52
2024-04-30	4009.24
2024-05-01	3371.02
2024-05-02	1885.77
2024-05-03	1885.58
2024-05-04	2446.55
2024-05-05	1362.34
2024-05-06	3313.30
2024-05-07	3072.97
2024-05-08	2074.02
2024-05-09	4018.79
2024-05-10	2392.95
2024-05-11	3558.24
2024-05-12	2536.24
2024-05-13	1266.73
2024-05-14	2724.67
2024-05-15	2702.98
2024-05-16	4978.37
2024-05-17	1480.76
2024-05-18	3012.11
2024-05-19	3764.54
2024-05-20	1614.20
2024-05-21	3550.77

2024-05-22	3629.75
2024-05-23	898.45
2024-05-24	1272.51
2024-05-25	3140.01
2024-05-26	2228.27
2024-05-27	963.04
2024-05-28	3970.14
2024-05-29	3266.43
2024-05-30	6536.25
2024-05-31	2102.56
2024-06-01	1182.72
2024-06-02	1578.59
2024-06-03	1995.22
2024-06-04	371.40
2024-06-05	2869.79
2024-06-06	1496.60
2024-06-07	5141.50
2024-06-08	1359.09
2024-06-09	3966.45
2024-06-10	4127.09
2024-06-11	3024.96
2024-06-12	1305.05
2024-06-13	2761.46
2024-06-14	2516.47
2024-06-15	2831.63
2024-06-16	3534.05
2024-06-17	2970.47
2024-06-18	2927.88
2024-06-19	1433.65
2024-06-20	1298.83

2024-06-21	3514.22
2024-06-22	1729.90
2024-06-23	2864.20
2024-06-24	2739.39
2024-06-25	3795.27
2024-06-26	2069.16
2024-06-27	5238.80
2024-06-28	1770.81
2024-06-29	4391.38

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181 rows in set (0.00 sec)

